

Combined Sewer Overflows (CSO)

Master Plan

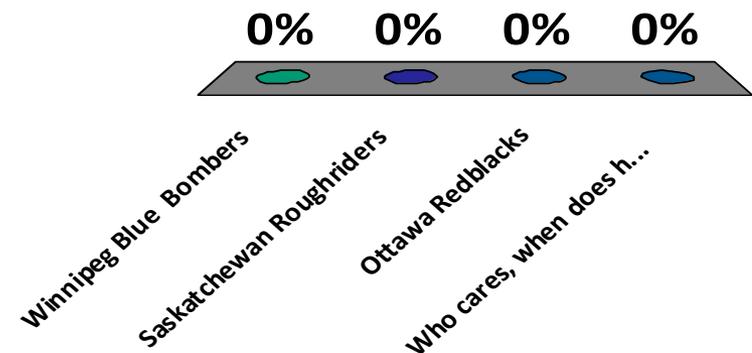
Public Meetings,
September 14-15, 2015

Outline

- What are Combined Sewer Overflows (CSOs)
- Why Manage CSOs?
- CSO History and Regulations
- CSO Master Plan
- CSO Evaluation Criteria and Control Limits
- CSO Costs

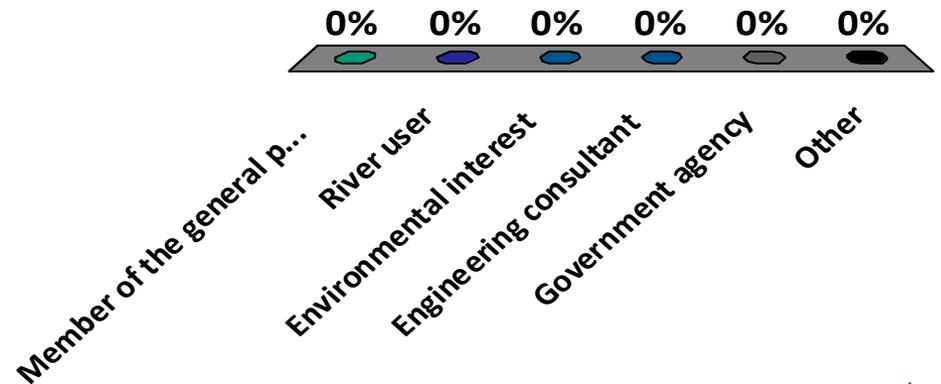
Who will win the Grey Cup this year?

- A. Winnipeg Blue Bombers
- B. Saskatchewan Roughriders
- C. Ottawa Redblacks
- D. Who cares, when does hockey start?



What brings you to this meeting?

- A. Member of the general public
- B. River user
- C. Environmental interest
- D. Engineering consultant
- E. Government agency
- F. Other



What area of Winnipeg are you from?

- A. North West (N of Assiniboine River, W of Red River)
- B. North East (N of Dugald Rd, E of Red River)
- C. South East (S of Dugald Rd, E of Red River)
- D. South West (S of Assiniboine River, W of Red River)
- E. Downtown
- F. Outside of Winnipeg

0%

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What is a CSO?

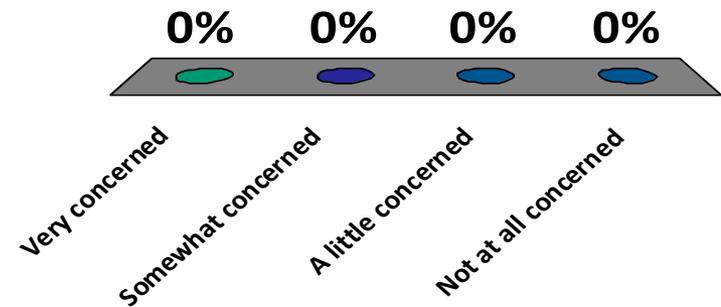
- [CSO Animation](#)

Why Manage CSOs?

- Regulatory changes
 - Manitoba Conservation and Water Stewardship issued Environment Act Licence No. 3042 (EA No. 3042) September 4, 2013
- Environmental Stewardship
 - CSOs can increase:
 - Nutrients in the rivers and lakes
 - Bacteria in the rivers and lakes
 - Floatables (garbage) in the rivers and lakes

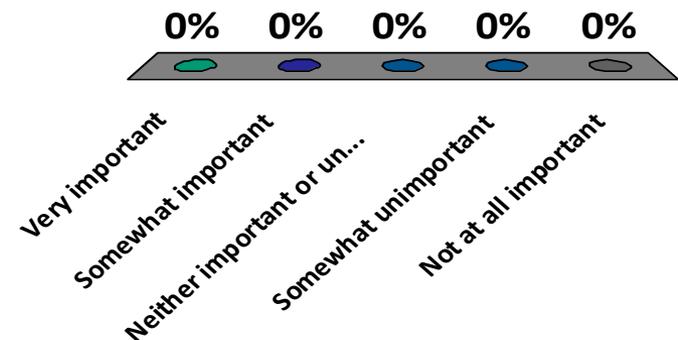
How concerned are you about CSOs?

- A. Very concerned
- B. Somewhat concerned
- C. A little concerned
- D. Not at all concerned



Compared to other infrastructure priorities in Winnipeg, like Bus Rapid Transit, Waverley Underpass or Sewage Treatment Plant Upgrades, how important is limiting CSOs?

- A. Very important
- B. Somewhat important
- C. Neither important or unimportant
- D. Somewhat unimportant
- E. Not at all important



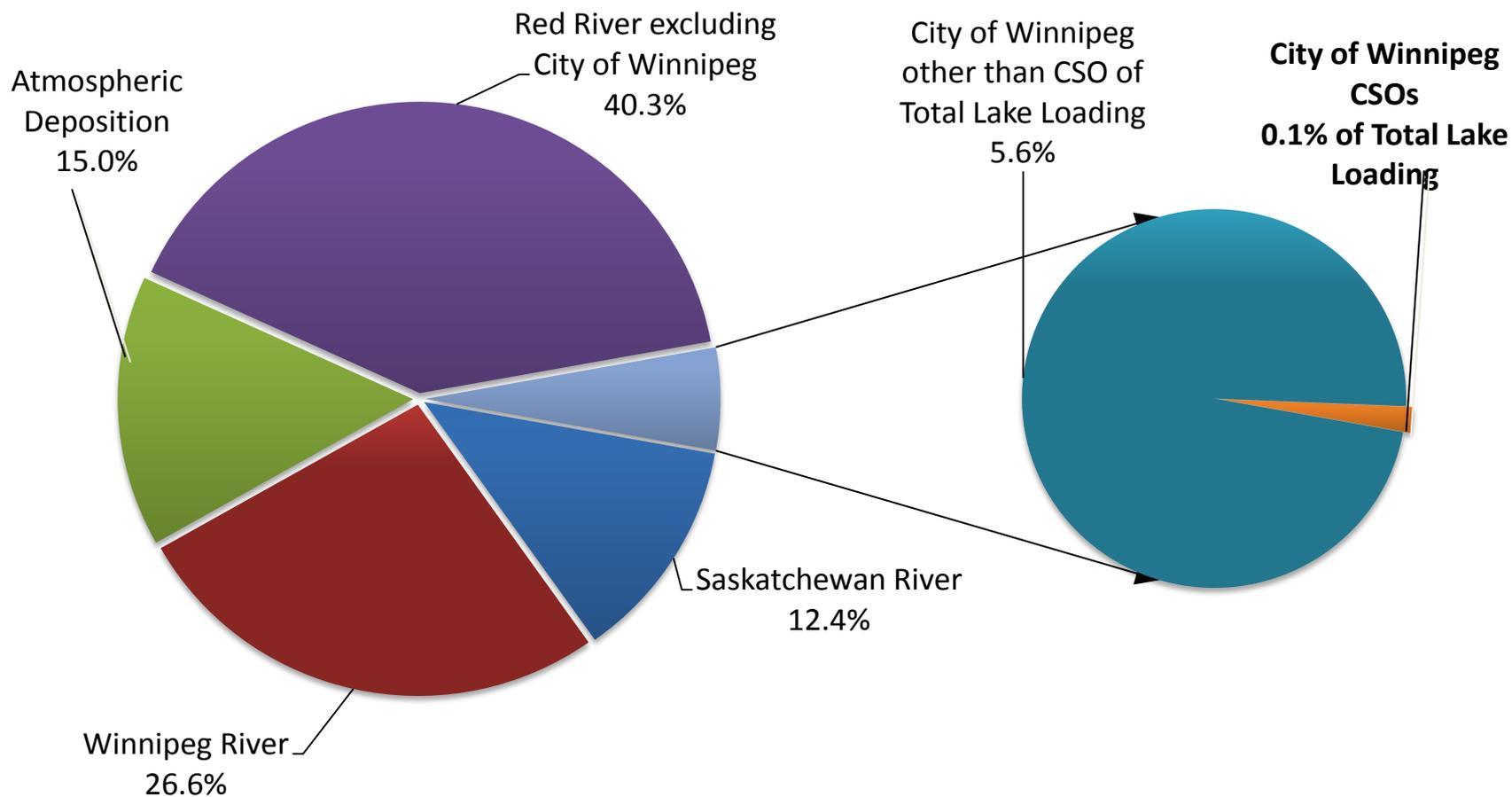
How much do nutrients from Winnipeg affect Lake Winnipeg?

- In 2002, a report* looked at river monitoring data between 1994 and 2001
- The report estimated total nutrient contributions from different sources to Lake Winnipeg
- The City of Winnipeg contributed 5.7% total nitrogen and 6.7% total phosphorous to Lake Winnipeg
 - Sources include sewage treatment plants, land drainage and CSO discharges

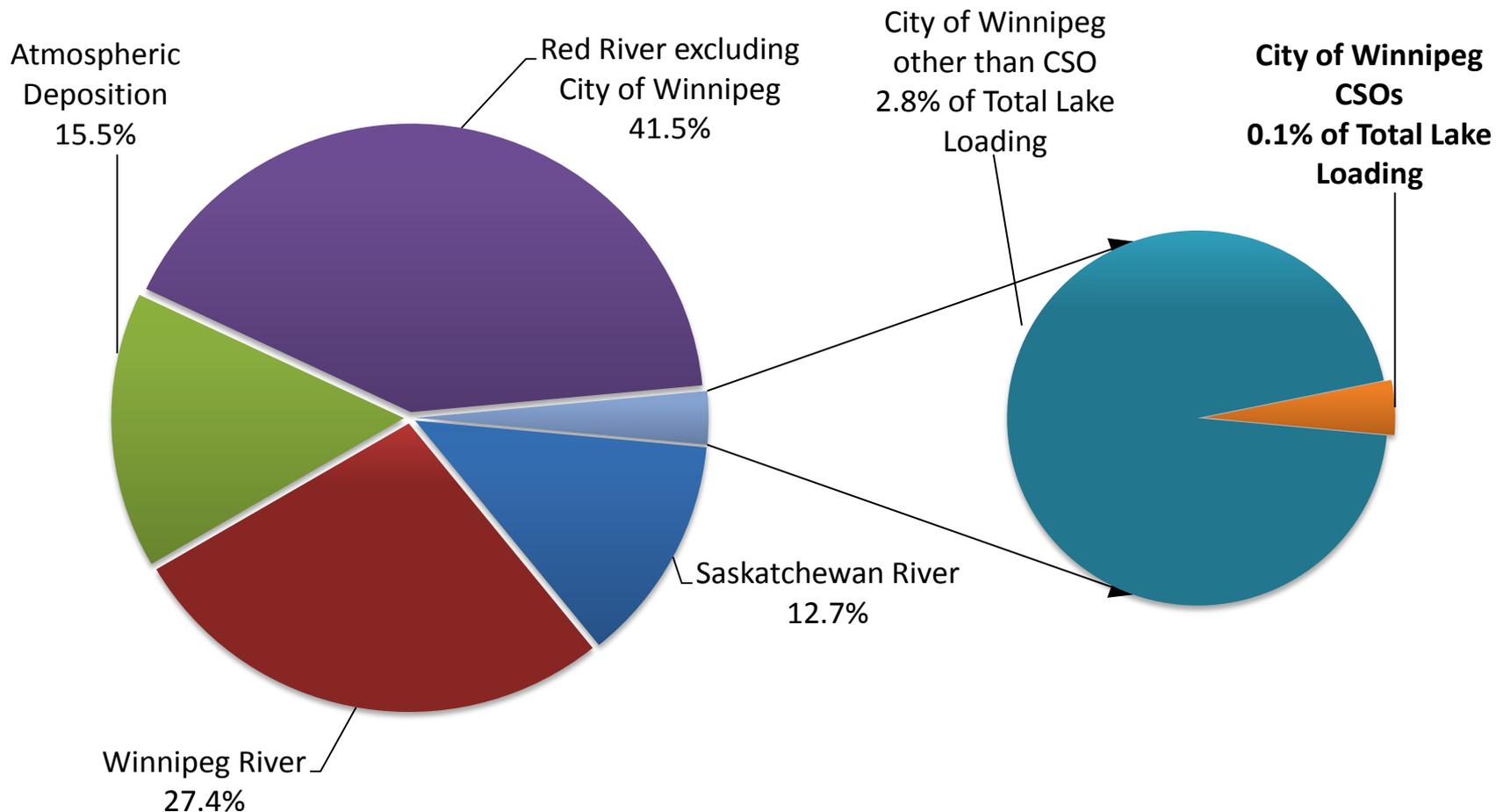
**A Preliminary Estimate of TN and TP Loading to Streams in Manitoba, 2002*

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Total Nitrogen Sources for Lake Winnipeg - 2002 Report Data

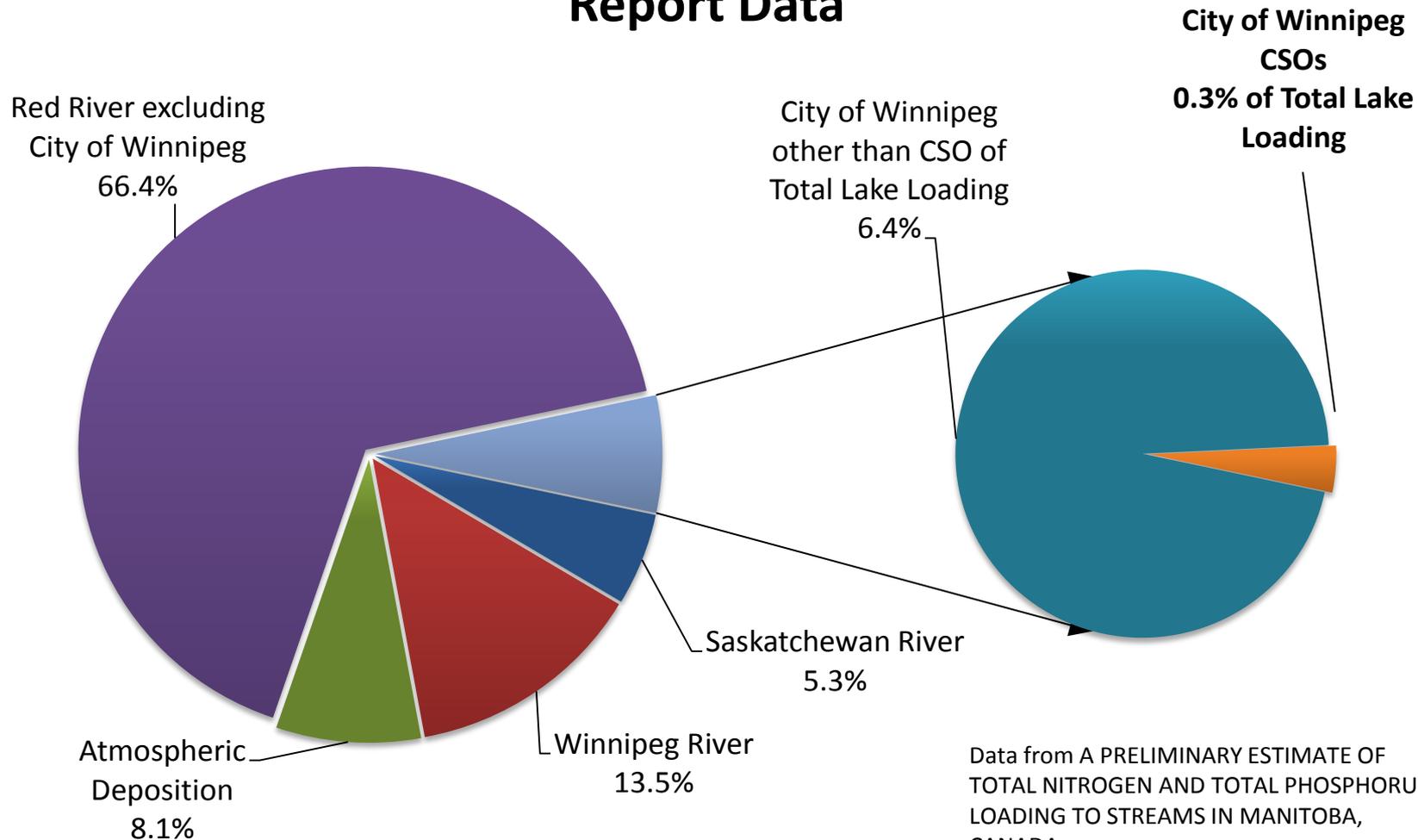


Total Nitrogen Sources for Lake Winnipeg - 2002 Report Data Updated with Current City Model

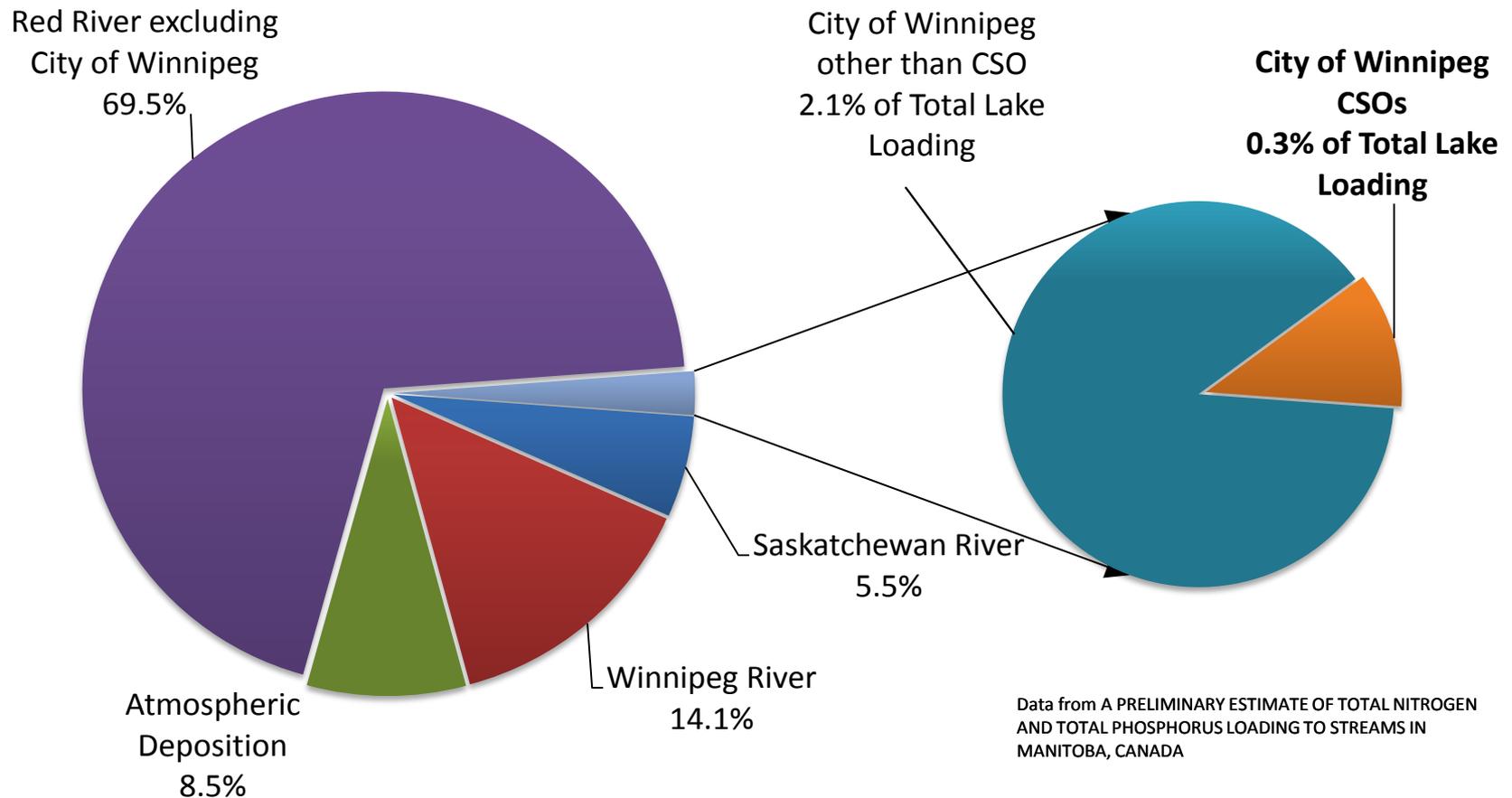


Total Phosphorus Sources for Lake Winnipeg - 2002

Report Data



Total Phosphorus Sources for Lake Winnipeg - 2002 Report Data Updated with Current City Model



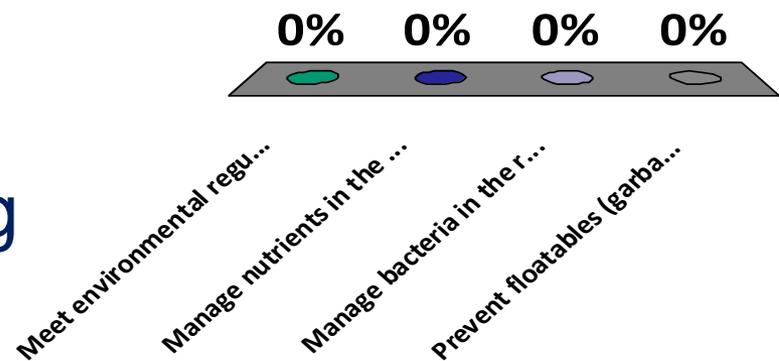
Data from A PRELIMINARY ESTIMATE OF TOTAL NITROGEN AND TOTAL PHOSPHORUS LOADING TO STREAMS IN MANITOBA, CANADA

Bacteria and Floatables in the River

- CSOs can increase fecal coliform and E.Coli in the river
- Bacteria levels return to normal three to four days following an spill
- Floatables (garbage) can wash into the river during CSOs and do not pose health risks to river users
- Land drainage and overland flows also cause bacteria increases and floatables in the river

The most important reason to control CSOs is to:

- A. Meet environmental regulations
- B. Manage nutrients in the rivers and lakes
- C. Manage bacteria in the rivers and lakes
- D. Prevent floatables (garbage) from entering the rivers and lakes



History of CSO Projects

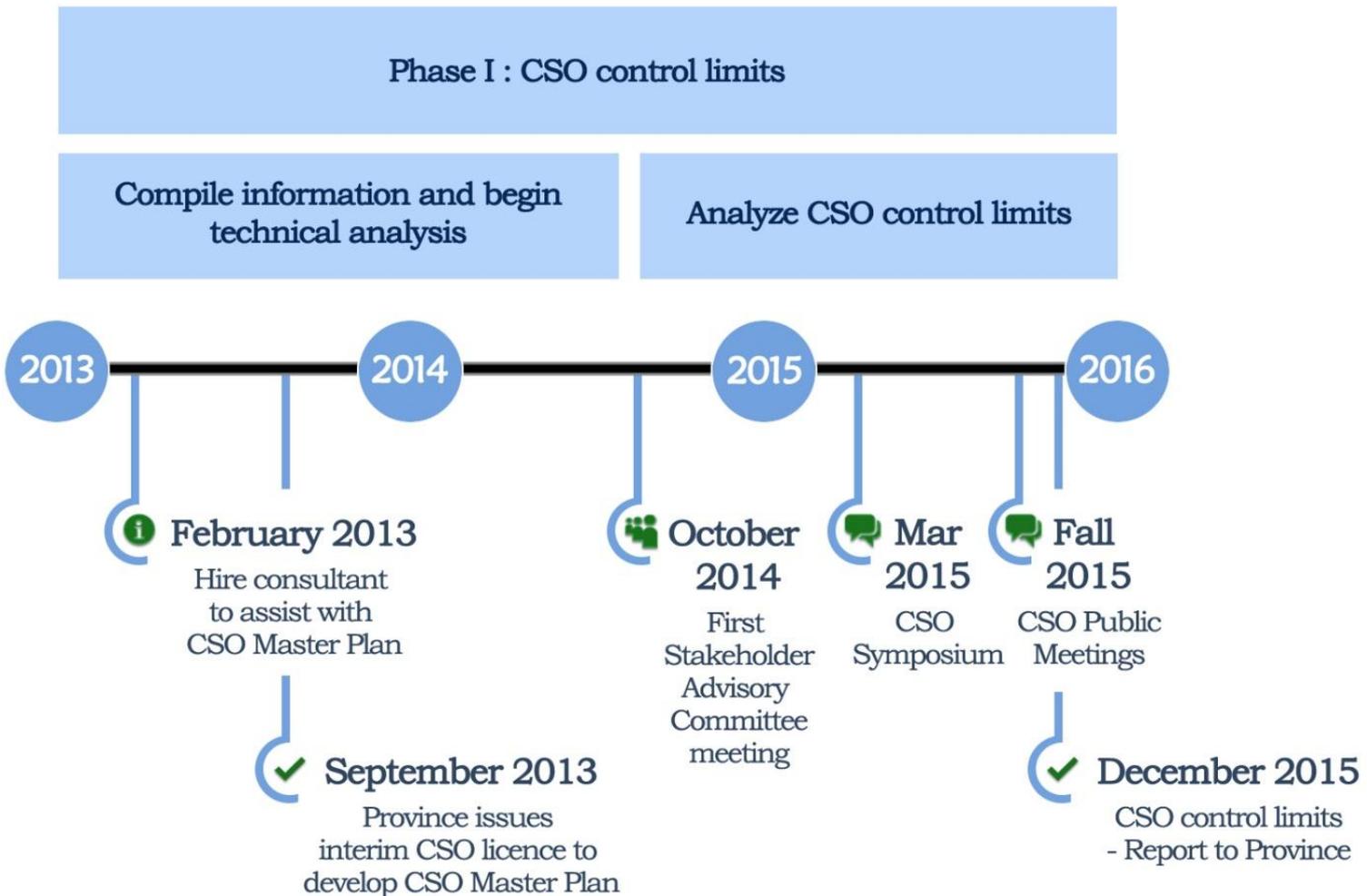
- First CSO study published in 2002, focused on CSO Management
- Submitted to Clean Environment Commission public hearings in 2003
- Investigating and reducing CSOs:
 - CSO outfall monitoring program
 - Pilot stormwater retention tank
 - Upgrading existing infrastructure
- Separating sewers



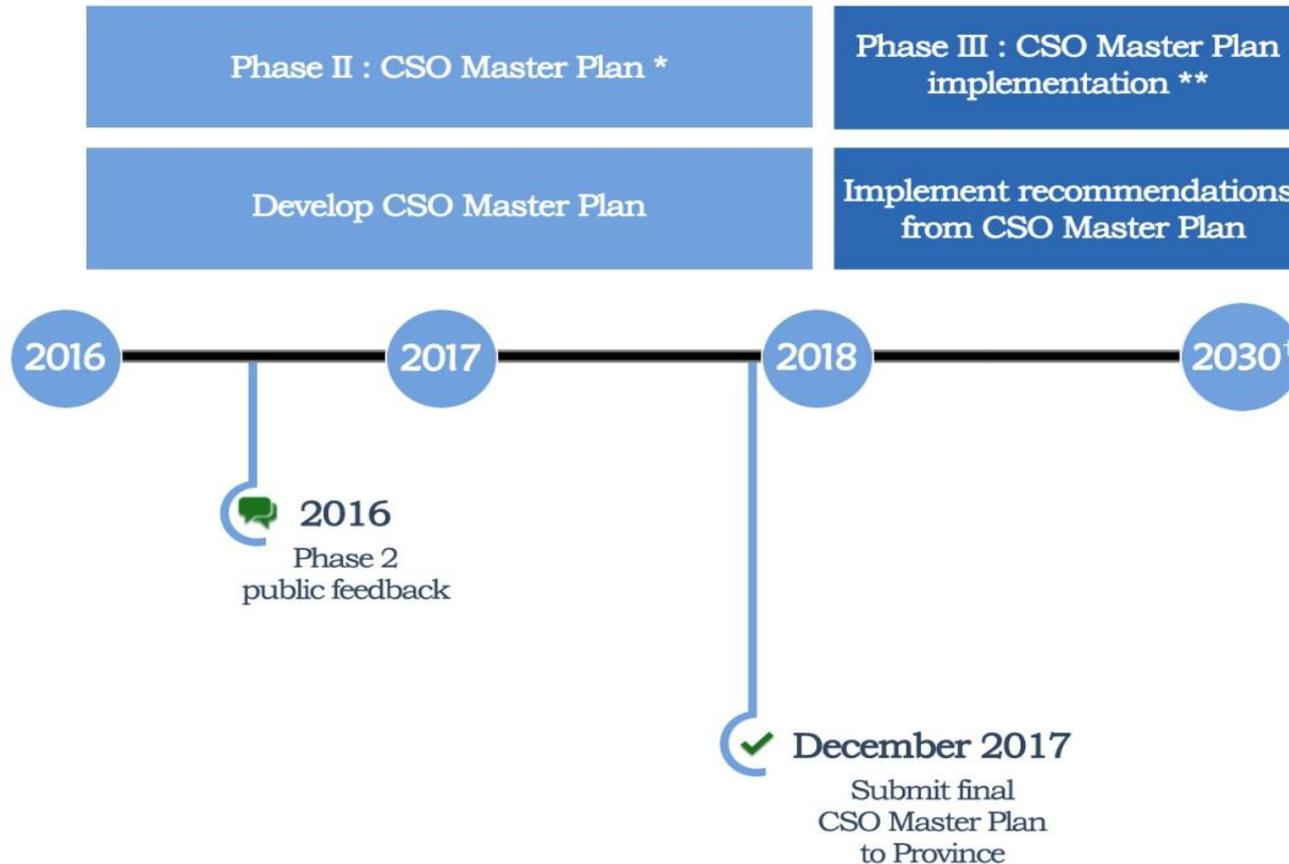
CSO Master Plan

- Started February 2013
- Study CSO impacts and evaluate control limits
- Develop a CSO reduction implementation program

CSO Master Plan Timeline



CSO Master Plan Timeline



* Timeline is dependent upon provincial response to the CSO control limits report

** Subject to provincial approval of the Master Plan

The CSO Control Limit Decision

- City to make a recommendation in the preliminary proposal
- Recommendation will take into account:
 - Affordability
 - Social impacts
 - Environmental impacts
 - Stakeholder Advisory Committee feedback
 - Public engagement feedback
- Province to review proposal and select control limit

Stakeholder Advisory Committee

- Chalmers Neighbourhood Renewal Coalition of Manitoba Neighbourhood Renewal Corporations (Winnipeg)
- International Institute of Sustainable Development
- Lake Friendly Stewards Alliance Partnership of the Manitoba Capital Region
- Manitoba Eco-Network
- Manitoba Heavy Construction Association
- Manitoba Conservation and Water Stewardship (Environmental Compliance and Enforcement)
- Manitoba Conservation and Water Stewardship (Environmental Approvals)
- Manitoba Conservation and Water Stewardship (Water Quality)
- Old St. Vital BIZ
- Rivers West
- Winnipeg Chamber of Commerce

Recommendation Criteria

Developed with Stakeholder Committee

- Visionary & Broader Context
 - *A control limit's impact on other City projects and priorities now and in the future*
- Economic Sustainability & Construction Capacity
 - *A control limit's impact on the economy and our ability to complete it efficiently*
- Livability
 - *A control limit's impact on the lives of citizens during and post construction*

Recommendation Criteria

Developed with Stakeholder Committee

- Innovation & Transformation
 - *A control limit's impact on the quality of life in Winnipeg*
- River Usability
 - *A control limit's impact on the water quality, bacteria levels, public health, odour, aesthetics recreation, etc. in Winnipeg rivers*
- Lake Winnipeg
 - *A control limit's impact on the health of Lake Winnipeg and the watershed*
- Value for Cost & Affordability
 - *A control limit's cost and the impact on future water rates*

Controlling CSOs will not:

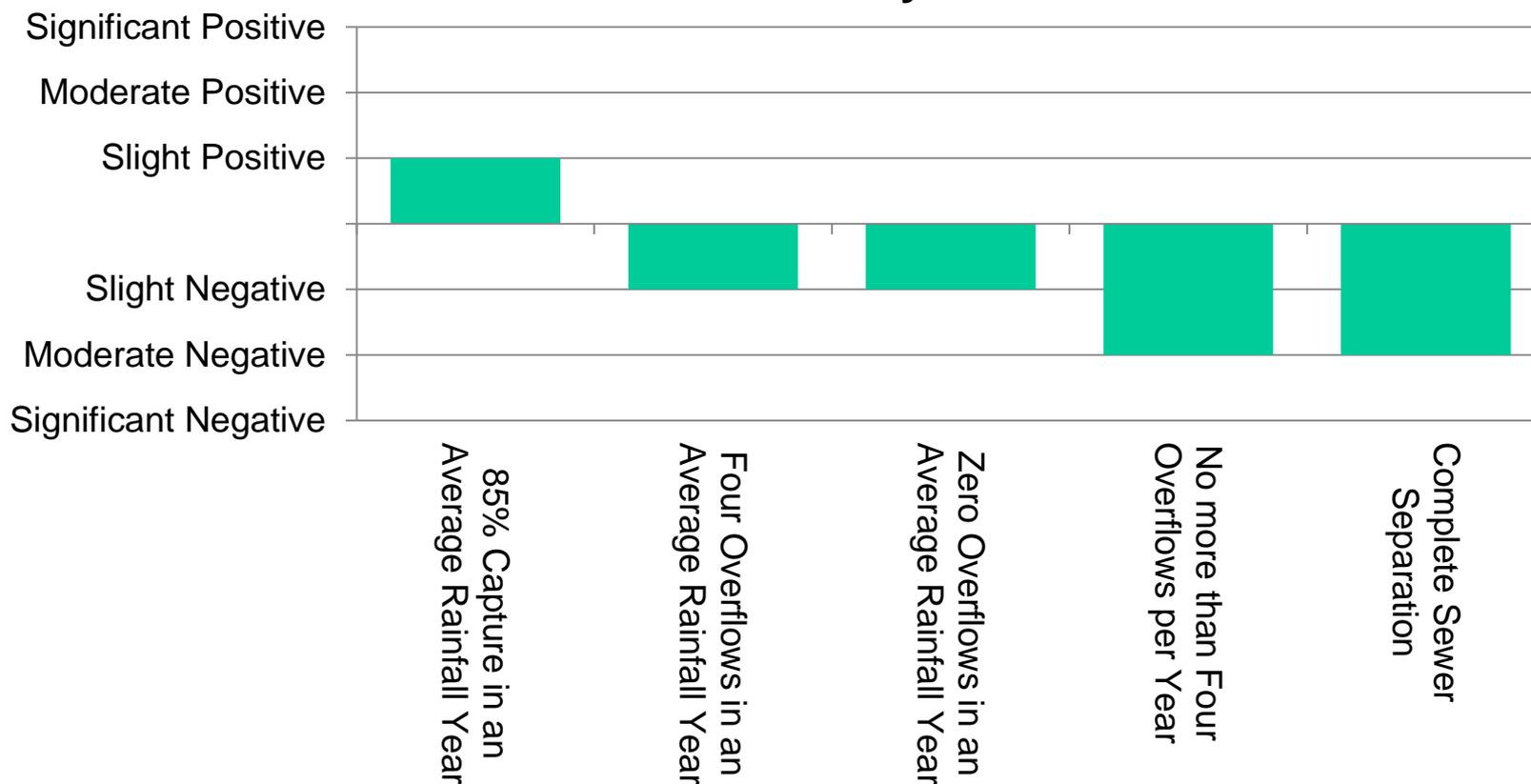
- Make river water drinkable
- Make the river safe for swimming
- Impact fishing
- Affect the colour of the river
- Change river chemistry (Ammonia and Dissolved Oxygen)

What are the Control Limit Options?

1. 85% Capture in an Average Rainfall Year
2. Four Overflows in an Average Rainfall Year
3. Zero Overflows in an Average Rainfall Year
4. No more than Four Overflows per Year
5. Complete Sewer Separation

Example of Criteria:

Livability



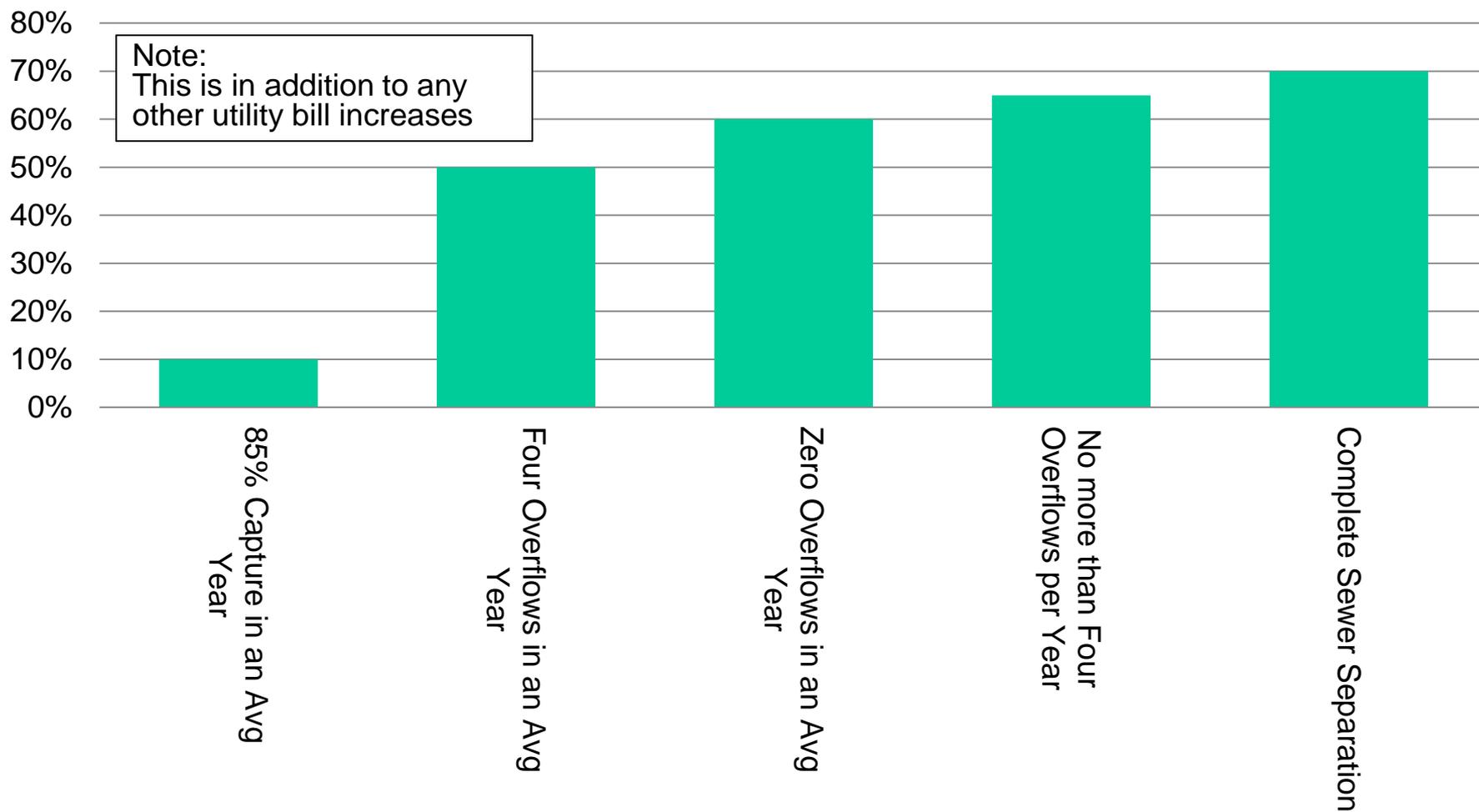
Sewer Separation at Ness Ave and Route 90



Costs of CSO Control

- The cost of implementing CSO control strategies will depend on various factors, including the strategies selected and the timeline to complete the plan
- Affordability is a high concern and a major factor in decisions being made
- Funding for combined sewer upgrades has been through utility sewer rate funds
- ***Cost estimates range from \$0.6 - \$4.1B***

Potential Increase to Average Residential Utility Bill

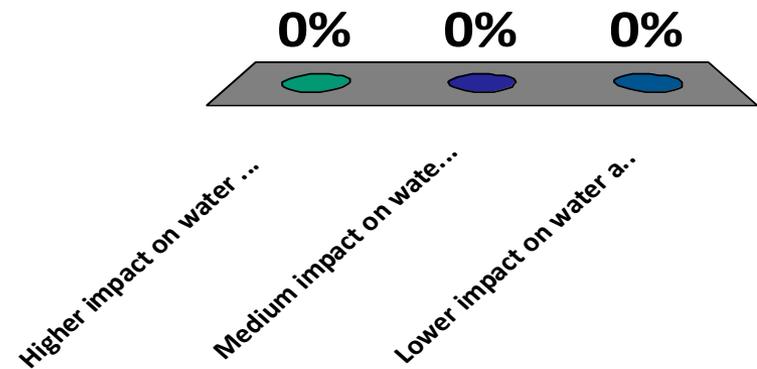


What will this mean to my Utility Bill?

- Assumed work completed by 2030
- Does not include any other forecasted increases, this is above and beyond
- Numbers are only representative at this point
 - Will be refined once a control limit is selected by the Province
 - If more time is given the increase can be spread-out over a longer time frame

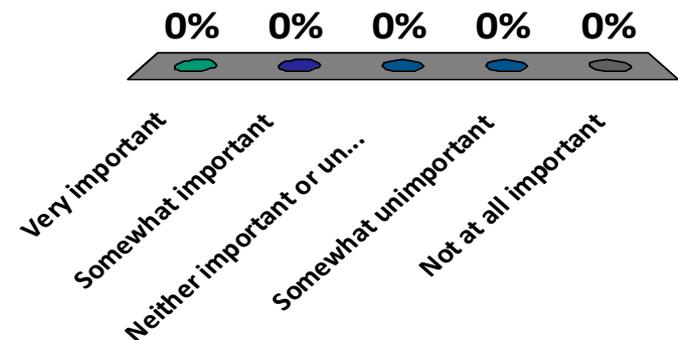
Provincial legislation requires us to limit CSOs. The limit options have significantly different costs and environmental impacts. We could complete this work in the following ways—which would you prefer:

- A. Higher impact on water and sewer utility bills, but yield benefits in the shorter term (15 years)
- B. Medium impact on water and sewer utility bills, but yield benefits in the medium term (30 years)
- C. Lower impact on water and sewer utility bills, but yield benefits in the longer term (60 years)



Compared to other infrastructure priorities in Winnipeg, like Bus Rapid Transit, Waverley Underpass or Sewage Treatment Plant Upgrades, how important is limiting CSOs?

- A. Very important
- B. Somewhat important
- C. Neither important or unimportant
- D. Somewhat unimportant
- E. Not at all important



Questions?

Let us know what you think

- Criteria – 3 blue dots to tell us what is most important to you
- Options – 1 red dot if you **support** the option being considered
- Additional feedback:
 - Comment on our website at wwdengage.winnipeg.ca/CSO-MP
 - Email at wwdfeedback@winnipeg.ca
 - Provide written comments at this meeting